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LAO-L EXAMINER

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ART UNIT	PAPER NUMBER
2609	8

DATE MAILED: 07/20/94

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined  Responsive to communication filed on 4/6/94  This action is made final.

A shortened statutory period for response to this action is set to expire three month(s), 15 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

1.  Notice of References Cited by Examiner, PTO-892.
2.  Notice re Patent Drawing, PTO-948.
3.  Notice of Art Cited by Applicant, PTO-1449.
4.  Notice of Informal Patent Application, Form PTO-152.
5.  Information on How to Effect Drawing Changes, PTO-1474.
6.

**Part II SUMMARY OF ACTION**

1.  Claims 21 - 40 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2.  Claims \_\_\_\_\_ have been cancelled.

3.  Claims \_\_\_\_\_ are allowed.

4.  Claims 21 - 40 are rejected.

5.  Claims \_\_\_\_\_ are objected to.

6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.

7.  This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8.  Formal drawings are required in response to this Office action.

9.  The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are  acceptable,  not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10.  The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been  approved by the examiner,  disapproved by the examiner (see explanation).

11.  The proposed drawing correction, filed on \_\_\_\_\_, has been  approved,  disapproved (see explanation).

12.  Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has  been received  not been received  been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14.  Other

**EXAMINER'S ACTION**

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1. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention.

The recitation of "wherein said thin film transistor has the other one of its source or drain addressed with said scan signal, and a gate supplied with data signal" in claims 38-40 is confusing since data signals should be applied to a source or drain of a transistor, and scan signals should be applied to a gate of a transistor according to figure 25 and page 36, lines 15-23).

2. Claims 38-40 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

4. A person shall be entitled to a patent unless --
  - (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 21-32 and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wakai et al.

Wakai et al teach a driving method for an electro-optical device with a light modulating layer (107) comprising a plurality of pixels (106, 107); addressing means (102) for addressing the pixels (106, 107) with a scanning signal for a predetermined period (T); and supplying means (103) for applying a data signal to pixels (106, 107) during a scanning period. The data signal consists a plurality of pulses and the number of the pulses are determined by a tone of an image to be displayed (see figures 1, 5, 7, 8, 9a, 9b and 10a-10c; column 1, lines 56-64; column 3, lines 37-49; column 4, lines 38-68, and column 5; lines 1-49).

As to claim 31, Wakai et al teach a method for a display device comprising image data production means (103) for producing image data; image data processing means (109, counter f, 110', 110, and 111) for processing image data and data signal supply means (112) for applying data signal to pixels during a scanning period (see figure 1, column 4, lines 50-68; and column 5, lines 1-16).

As to claims 22-25, 27-30, 32 and 36, Wakai et al teach a method for a display device comprising a light modulating layer (107) with a liquid crystal, a plurality of pixels (107, 106) which is located between a column electrode (105) and a row

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electrode (104); and data signal pulses are constant (see figures 1, 10a-10c; and column 4, lines 38-49).

6. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

7. Claims 33 and 35 are rejected under 35 U.S.C. § 103 as being unpatentable over Wakai et al in view of Kanayama.

Wakai et al fail to disclose a latch circuit, a flip-flop circuit and a counter. Kanayama teaches a method for a display device comprising a memory (11); a latch circuit (20); counters (PC1-PCN); and flip-flop circuits (FF<sub>1</sub>-FF<sub>N</sub>) (see figures 3, and 4; and column 6, lines 10-43). It would have been obvious to have modified Wakai et al with the teaching of Kanayama, since it is well known to apply a counter and logic circuits in a display device for processing image data.

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8. Claim 34 is rejected under 35 U.S.C. § 103 as being unpatentable over Wakai et al in view of Kondo.

Wakai et al fail to disclose ROM means for storing gradated display data. Kondo teaches a display device comprising a display (20); a ROM (6) and a memory for storing gradation data (see figure 1; column 4, lines 45-61 and column 13, lines 33-36). It would have been obvious to have modified Wakai et al with the teaching of Kondo, so the gradation data can be output from a memory when the display device needs.

9. Claim 37 is rejected under 35 U.S.C. § 103 as being unpatentable over Wakai et al as applied to claim 31 above, and further in view of Amano.

Wakai et al fail to disclose a video signal receiving circuits. Amano teaches a video display system comprising a video signal receiving circuit (5) for receiving television signals (see figure 5, column 41-44). It would have been obvious to have modified Wakai et al with the teaching of Amano so as to provide television signals to a display.

10. Claims 38-40 rejected under 35 U.S.C. § 103 as being unpatentable over Wakai et al in view of Okada et al.

Wakai et al fail to apply data signals to a gate line of a transistor and scan signals to a sources line or a drain lines of a transistor. Okada et al teach an active matrix display device comprising a data line ( $G_{2j}$  or  $G_{2j} +$  or  $G_{2j+2}$ ) coupled to a gate line

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of a transistor (FET) and a scanning line ( $S_n+1$  or  $S_{n+2}$ ) coupled to a source or a drain line of a transistor (FET) (see figure 14 and column 9, lines 10-15). It would have been obvious to have modified Wakai et al with the teaching of Okada et al, so as to greatly reduce the number of signal lines and simplify the display circuit (see column 1, lines 60-63).

11. Applicant's arguments filed on 4/6/94 have been fully considered but they are not deemed to be persuasive.

As to applicant's argument that Wakai et al does not disclose the use of a plurality of pulses where the number of pulses is determined depending on the tone of an image to be display on page 4, the examiner disagrees with it since Wakai et al does teach data signal comprising a plurality of pulses (see figures 5, 8, and 10a-10c).

As to applicant's argument that Wakai et al's data signal is a continuous pulse on page 5, the examiner agrees with it. The data signal is a continuous pulse when the signal is considered as a whole. However, the continuous pulse consists of a plurality of pulses (see figures 5, 8 and 10a-10c).

As to applicant's argument that applicant's invention relies upon a plurality of separate pulses on page 5, the examiner may agree with it. However, such recitation could not be found anywhere in the original claims 21-37.

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As to applicant's argument that Wakai et al's pixel element is not a three-terminal element, the examiner may agree with it. However a three-terminal pixel element could not be found anywhere in the original claims 21-37.

12. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-Yi Lao whose telephone number is (703) 305-4873.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Lun-Yi Lao/skf *L*

July 14, 1994



RICHARD HJELPE  
PRIMARY EXAMINER  
GROUP 2600